



Science News-Letter

The Weekly Summary of Current Science

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A Science Service Publication

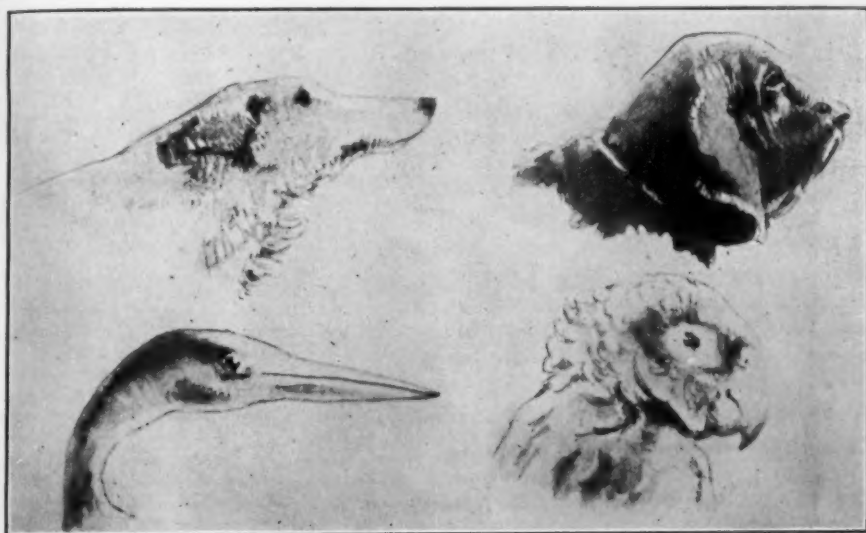


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ZOOLOGY

Animal World Has Mutts and Jeffs



AN ASTHENIC AND A PYCNIC from dogdom along with the lanceolate heron and well rounded parrot show the divergence of types among animals.

By MARJORIE MACDILL

This is the age of the flat. In the string bean era of the present there is no place for the merely fat. Every pendulum, however, sways nearly as far backward as it swings forward, and the pendulum of style is no exception, as a cursory inspection of back files of fashion plates or an afternoon's ramble in an art gallery amply testify.

While they are waiting for the backward swing that will bring into vogue again the billowy curves beloved of the caliphs, as sung in Burton's version of the Arabian Nights, the would-be flat fat ones may get a modicum of consolation from a peek into the realm of biology. Here they can take consolation with a whole host of bugs, beasts and fishes cast by Nature during an opulent mood and commiserate with ladybugs too round to wear their polka-dots becomingly. For the foxy old dame has molded just about as many of her creatures on the lavish curves of Falstaff as she has into the stream-

line proportions of the agile Hermes. Or else the thick and thin survive in pretty equal proportions according to the processes of selective evolution, whichever way you want to look at it, depending on whether you are a fundamentalist or a physiologist.

The pigeon-holing proclivities of science know no end. That fascinating pastime of classifying their fellow creatures into types, that rightfully belongs to the anthropologists, has in recent years spilled over into the fields of medicine and zoology and even entomology. As a result we hear much learned parlance about "round" dogs, "flat" fishes, "pycnic" beetles, "asthenic" birds, "digestive," "respiratory," "mesomorphic" types of mere men.

Type classification is not new in medicine. As far back as the time of Hippocrates, the father of the art, medicos liked to divide their patients up into the thick and the thin, the tall and the stout. Centuries before any dignified wearer of

the professional spinach ever dreamed of the existence of a germ, physicians recognized the fact that fat patients fell easy victims to certain diseases to which scrawny ones were comparatively resistant, and vice versa. When the germ theory of disease became an established fact, however, the whole medical clan went baying down the track of bacteria and sub-microscopic viruses, and type diagnosis fell into disrepute and stayed there for many years. But now, augmented by many new findings of modern science, it has come to occupy a place of increasing prestige in the medical scheme of things.

Pycnics and Asthenics

The stylish stout and the modish thin are denoted in the nomenclature of a famous German savant, whose system of classification has received much acclaim among many sorts of scientists, as "pycnics" and "asthenics." Dr. William Morton Wheeler, professor of entomology at the Bussey Institution for Applied Science at Harvard University, describes these types in the *Quarterly Review of Biology*, as follows:

"The asthenic is pale, scrawny, long-limbed, with narrow head and face ('hatchet-faced') long, narrow, straight nose, small, often receding chin, narrow chest and abdomen, deficient development of fat and musculature, reduced pilosity on the body but often with abundant cranial thatch, abstemious, dyspeptic, with a tendency to tuberculosis, and when insane, schizophrenic, i. e., prone to fixed ideas, ideas of persecution, etc. This type is active, intense, intellectual, self-centered (introverted), often deficient in a sense of humor, fond of reforming, dogmatic or fanatical, and not infrequently detestable when claiming a too intimate knowledge of the Almighty's plans for making the world safe for democracy.

(Just turn the page)

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Animal Types

(Continued from page 33)

The pycnic—so called, not because he likes picnics, though no other type is so fond of them—but from a Greek word meaning compact or thickest—is rubicund, rotund, large-bodied, short-limbed, broad through the chest, but broader through the abdomen, with round or pentagonal face, pug or thick nose, moderately pilose, fond of eating and drinking, eupeptic, with a tendency to apoplexy and arterio-sclerosis; on the mental side cyclothymic, i. e., predisposed to the recurring, circular or manic depressive forms of insanity, such as melancholia; extroverted, socially easy-going, tolerant in morals and religion and often very lovable because claiming no inside information in regard to the Almighty's designs.

"These two types in their purity are sufficiently frequent among our American population. The popular distrust of the asthenic and fondness for the pycnic is indicated by the fact that Satan, or Mephistopheles, is usually represented as an asthenic while the favorite gods and saints of China and Japan are depicted as fat as pycnics. When the belief in Satan was more vigorous than it is at present, he and his demons were often represented as belonging to the asthenic type. Why the people should have chosen a symbol like Uncle Sam to represent the United States and one like John Bull to represent England was not altogether clear till the passage of the Volstead Act. Among historical figures the reader will recall Cassius (as depicted by Shakespeare), Dante, Savonarola, Torquemada and John Calvin as asthenics and Falstaff (as conceived by Shakespeare), Martin Luther and ex-President Taft as pycnics. In fiction Don Quixote and Sancho Panza are good examples of the two types. Bud Fisher's creation of Mutt and Jeff may also be cited in

(Continued on page 41)

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Explorations Yield Nature's Secrets



EXPLORING WITH A CAMERA.
These pictures were taken by Edna McComas, a Camp Fire Girl of Smithville, Mo.

Camping presents the golden opportunity for becoming really acquainted with the wonderful outdoors, for opening the eyes of campers that they may discover for themselves the interesting things in the live world about them. Often, however, it is difficult to induce the proper attitude on the part of a large number of individuals thus living together. In some, the natural first interest in woodlore is still awake, while others have an unnatural or forced interest which borders on sentimentality. The summer camp should try to foster a normal growth of interest in nature which will become a part of the camper's life wherever she may be.

The Girl Scouts at Camp Bonnie Brae have discovered a game which helps to solve the problem of stimulating the inquiring attitude and promoting a natural growth of interest in this important subject. Everyone in camp, from the youngest to the oldest, including counselors, was eligible to play the game but of course no one was required to participate in it. The game consisted in accomplishing a certain number of quests and thereby advancing from one rank to a higher one. All who started to play the game were required to pledge not to give or receive help in attaining the quests. Then each person was given an orange disk to wear on the left sleeve, which signified that she was a Seeker, the first rank in the game. Each morning, at breakfast, a quest was announced such as:

"Catch a mosquito and count his legs and wings," or "Measure the shadow cast by some object at two

different times in the day. Tell the differences in direction and length."

The answer to the quest was written out briefly by each Seeker and dropped into a box reserved for that purpose. Correct answers were announced at breakfast the following morning and a few interesting remarks made about the quest. Sometimes different individuals reported their varying experiences.

When a person had completed six quests she was eligible to establish a claim. This meant discovering some plant, insect, mammal's home, bird's nest or some other object about which she had known nothing, and finding all she could about it, first through observation and then by consulting a reference book or some person who could give her the necessary information. With this done, the girl was elevated to the rank of Finder and her new badge showed the head and antennae of a firefly.

For the next rank, seven additional quests had to be attained and then the candidate received "Sealed Orders." This consisted in getting written directions of something to be done. Going over the Treasure Trail which led to various interesting natural objects about camp was one instruction. An Insect Trail which led to the abodes of plant lice, two kinds of wasps, galls, and spiders, the insect's cousin, proved a popular order. At each place a question, the answer to which depended upon observation, was asked. Some of the orders required the use of ears and noses as well as eyes. The mystery of not knowing just what to expect appealed to the girls. On fulfilling these requirements the player of the game was made a Beholder and to designate her accomplishment wore a disk showing the completed body of the firefly.

The highest rank of the Explorer's Game was completed by getting eight additional quests and going on a great adventure. When several of the explorers were ready for an adventure they were summoned to report at a certain time and place. Sometimes it was early in the morning and a trip by boat up the creek was made, where birds, flowers, trees and all sorts of wild life were abundant. This helped to round out the experiences which had gone before and provided the "thrill" which a real adventure should give. The players were now called Revealers and wore a disk showing the whole



firefly with abdomen colored a bright orange to signify light. The game now took a new turn, since as Revealers they were expected to give light to others. They now made up the quests and the sealed orders and planned the adventures for the rest—they were the makers of the game. It was with great spontaneity and enthusiasm that the Revealers responded to the requests for suggestions for quests.

The possibilities of this game are great, for included with the quests about birds and flowers were some pertaining to health habits and health observations. Many of the phases of camp craft having to do, for example, with selection of firewood and building of fires might be included.

Moreover, many of the campers, after their return home, sent for more quests which they might pursue at home, and this led to discussion and development of the idea for troop work. It was found feasible enough and so lent a new zest to nature study and troop activity the year round.

Following are some examples of the sealed orders, adventures and quests as used at camp:

Take a net to south creek, cast a net at least 3 times. Bring back in jar of water some of the things you find. Learn all you can about them.

Row to shore north of camp. Keep absolute silence. Report interesting things you observe.

Go out on Olympic Trail and listen for 10 minutes. Report all the different sounds you hear.

Go to woods away from main camp and stay until the first bird appears. Describe appearance and note carefully what it is doing.

The Insect Trail

Directions were given as follows: Take a pencil with you on this trail.

(Just turn the page)

Nature Explorations

(Continued from page 35)

Answer all questions marked with a number.

Go to the maple tree at the north corner of the front porch. (At the maple tree a new note was found with a question to be answered, and new directions to follow.)

This is the home of *Bombus*, the bumble bee. You may see some of the workers carrying pollen into the nest. They will use it to feed the young bees inside which are little grub-like creatures living in cells made of wax and pollen.

1. Do you see any of the bumble bees going in with pollen? Hit the tree with a stone and listen for a noise.

Follow along the path to Tanglewood and find the pantry of a caterpillar on a poplar tree.

Every tree has hundreds of insects that feed on all parts of the tree. Notice how this tree has been eaten.

2. What part of the leaf does this insect eat, the edge, or the flat surface?

Now go to the Tanglewood wash house and find the homes of two spinners.

The big circular web is the home of the arachnida, the spider who is not an insect, for she has too many legs.

3. How many legs has a spider?

The other spinner is one that made a woolly cocoon just to sleep in. When it wakes up it will be a moth.

Now head for the home of the web presided over by human hands (weaving house). Look in the southeast corner for the hospitable tree that has sheltered and fed many creatures.

Surely the willow's hospitality has been sadly repaid. This is shown by the tattered condition of the leaves. The queer growths on the leaves are called galls. In the center is a little cell in which a small grub spends his "eating days."

4. On which side of the leaf do you find the growths? Just on the right of the path entering the "web" (weaving house) you will find a plant crowded with a family of hungry aphids.

5. What other insects can you see on the same plant? Go to the east of the "web" and find the home of the original papermaker.

This is the home of *Polistes*, a wasp whose home is not enclosed by an envelope of paper.

6. How many cells are closed? Circle about the athletic field and listen to the insect orchestra which is serenading you. Look near first base for further orders.

7. Can you find a serenader? If so, what is it? Now to the stage where human creatures are often serenaded as they dine. Here you will find the home of another papermaker.

8. This is *Vespa's* home. How does it differ from that of *Polistes*? Look behind the piano for the end of the trail. The trail ends.

9. How did you like it, and why?

Adventures

I. Row down creek and note everything of interest.

II. Stay on beach all night and watch for deer.

III. Camp on beach all night and make observations of muskrat hole.

IV. Go 20 flowers up the road. Proceed until 5 insects are found. Follow along the road until you meet 3 different stones. Advance 3 prints. Next advance 6 different trees. Walk 1 bird farther. Note one other interesting observation. Turn back after noting how far you have gone.

Additional Questions

1. Many plants have a foamy white liquid on the stem. Find what is inside (Spittle Insect).

2. Find a flower under an arrow wood shrub on the north side of the road. What is the name of the flower? What does this plant lack that most other plants have? (The plant was broomrape and was labelled.)

3. Describe or sketch at least three kinds of prints found on the beach.

4. Watch an ant for a few minutes. Report your observation briefly.

5. For a rainy day—Name as many

minerals found about the house as you can find.

6. Where do flowers of pickerel weed start to bloom first?

7. Walk along the beach 150 paces and find the home of a fur-bearing mammal.

8. Find the home of the first spinner, the first cement maker, the first paper maker.

9. Find a tree or vine that has a leaf like your hand (five leaflets).

10. Find two ways in which the mountain ash differs from sumach.

11. What animal lives under a stone two paces from the well? (Toad.)

12. Find a tree stump and determine how old the tree was when cut.

DOROTHEA CLARK,
Girl Scouts.

Science News-Letter, July 16, 1927

Nature Coordination

Realizing the need for a national program that would coordinate the nature activities of national groups working with young people, the American Museum of Natural History invited these volunteer organizations to form a council to be known as the Coordinating Council on Nature Activities for the purpose of teaching the growing generation, through nature activities, the value of all wild life and natural resources and their conservation.

The various organizations represented are as follows:

American Museum of Natural History, American Natural Study Society, Boy Scouts of America, Camp Directors Association, Camp Fire Girls, Inc., Girl Scouts, Inc., Pioneer Youth of America, Playground and Recreation Association, Woodcraft League of America.

Science News-Letter, July 16, 1927

About 90 per cent. of the late model aircraft engines in the United States are equipped with a magneto ignition system.

The brook trout or speckled trout can change its color and markings rapidly when passing from one environment to another.

It has been predicted that sun spots, which have been gradually increasing in number since 1923, will reach a maximum about 1928.

Three airplanes flying in a line five miles apart and 100 miles an hour are able to map 2,000 square miles of territory in one hour.



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AVIATION

Excess Power Safe Planes

Though it may not often be used, plenty of power is one of the prime essentials of safe airplanes, especially if they are to reach the point where private individuals will have their own airplanes as they now have autos. This is the opinion of Louis G. Meister, aeronautical engineer of Marysville, Mich., expressed in a report to the Society of Automotive Engineers, on airplanes for individual ownership. Extra speed makes it possible for the planes to climb faster and so necessitates a shorter run before take-off. As most of the accidents to airplanes occur at the take-off, this is an important aid to safety.

Visibility is also important, says Mr. Meister, because even the most strongly built airplane will not be safe if it is "blind," and as a privately owned plane might frequently have occasion to land at a strange airdrome, it is necessary that the pilot's view be as unobstructed as possible. In order to secure this, especially in bad weather, it may be desirable that the pilot remain in an open cockpit, and not be inside a cabin, as the rain-covered glass might seriously hamper his sight.

Brakes are essential on the wheels for use when landing, and the amphibian landing gear, which makes possible alighting on land or water, looms large as a possibility of the future.

Science News-Letter, July 16, 1927

The newest means of using the magnetic field of the earth as a guide has played a prominent part in recent aerial flights. This is the earth inductor compass, developed first by the inventive genius of scientists at the U. S. Bureau of Standards.

With such a compass Lindbergh flew directly to Paris, without the aid of a single terrestrial or celestial guidepost. The Columbia and the America were also so equipped. While the storm which Byrd struck when he reached France apparently temporarily disabled his compass, it at least worked on the way over. As he did not see water or sky from the time he left the shores of North America, the compass must have worked while he was over the ocean, or he would not have hit France at all.

Like the familiar magnetic compass, the earth inductor compass depends on the fact that the earth is a great magnet. It also depends upon the principle of the electric dynamo: Spinning a coil of wire in a magnetic field produces a current of electricity in the coil.

In the dynamo, there is what is called a field magnet to produce the magnetic field which surrounds the moving coils, or armature. In the earth inductor compass, the earth itself acts as the field magnet. The armature consists of four coils of wire, wound to form a cross. It is spun as the plane goes through the air by means of a four-cupped windmill.

As the coils revolve they touch brushes which pick up the current generated. When the coils touch the brushes while they are in an east and west direction, there is no current. The wires of the coil are then moving in the direction of the lines of force of the earth. In order to have a current, the wires must cross the lines of force. However, if the coils are north and south, or in any other direction than east and west, a current does flow. Then a delicate galvanometer on the plane's instrument board shows the deviation from the course.

To use the compass, the brushes may be set so that they are in an east and west direction, when the plane is flying north, for example. The galvanometer will tell the pilot if he departs from a northerly direction. If he wants to fly in another direction, the pilot can set a control-

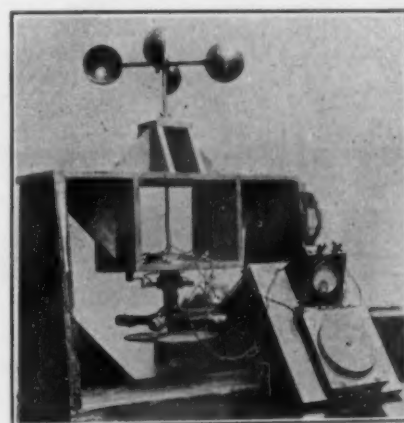
ler dial. Then the galvanometer will indicate zero when he is flying in the direction for which the control dial has been set. If he starts in the wrong direction, he merely has to turn the plane slightly, and the galvanometer needle will again indicate zero.

The chief advantage of the earth inductor over the old form of compass is that it can be read at a distance. The inductor mechanism is set in the tail of the machine, far from the electric coils and steel of the engine and other machinery that would affect the compass needle. Also, the motion of the plane as it banks on one side or the other does not disturb it, as it would a freely swinging needle.

The sun compass which Commander Byrd used on his polar flight is especially adapted for use in the Arctic, because there the magnetic pole is south of the flyer. A magnetic compass, whether earth inductor or not, would indicate any direction but north. Every Boy Scout is familiar with the principle of the sun compass, for he can use it to find the north with a watch.

Point the hour hand of your watch to the sun. Then south is half way between the hour hand and the figure twelve. If the watch were of a kind used in European countries, with a twenty-four-hour dial, it would be simpler. Then you would merely need to point the hour to the sun, and the figure twenty-four would point to the south. In effect, the sun compass is such a twenty-four-hour watch.

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Search for Lost Meteorite

Somewhere in Nevada there is a lost meteorite. Forty-five years ago it blazed its way to earth through the evening sky. Since then repeated attempts to trace it to its final resting place have ended in failure. The latest fruitless search took place last month and has just been brought to a close with the return to New York of Dr. Chester A. Reeds, associate curator of invertebrate palaeontology in the American Museum of Natural History. Dr. Reeds headed the searching party sent out by the museum in response to a recent report that the meteorite lay buried in a haystack yard in the upper end of the Jackson Valley, Jackson Mountains, Nevada.

The original report of the meteorite's arrival on this planet came from Tuscarora, a silver mining camp in the northern part of Nevada. Several witnesses there observed its passage through the sky at twilight one evening in the fall of the year, about 1882 or 1883. All agreed that it was an unusually large meteorite and that it undoubtedly landed in Nevada. But estimates of its specific landing place have differed widely and have so far all been wrong.

One of the eye-witnesses estimated that the meteorite fell fourteen to sixteen miles from Tuscarora and said that some persons who claimed to have dug down to it reported it to have fallen in a creek bottom where the bed-rock formation was not very near the surface, the meteorite going into the earth thirty-four feet and still remaining raised above the surrounding landscape.

Another observer, a mining engineer who was in Tuscarora at the time, gave a graphic description of what he saw.

"I remember distinctly," he said, "seeing what I presumed to be the cloud left by the passing of the meteor. I was in the open and looked up and saw what seemed to me a coil of smoke of a peculiar color, much like the fluorescent color of Willemite under the ultra violet ray, or the color of molten gold. It was not in a straight line, but seemed to have convolutions. I was very much astonished at the sight and for a moment was unable to comprehend it or to assign any cause to the phenomenon. I did not see the meteor itself, nor did I see the place where it landed. I believe the cattlemen reported it to have fallen in the country west of Mt. Blitzen. It

(Just turn the page)



BIRD T. BALDWIN

Specialist in Babies

Baldwin babies are a popular brand in Iowa, where Dr. Bird Baldwin directs the Iowa Child Welfare Research Station. Parents all over the state bring up their children scientifically by Baldwin methods, and a considerable number send their babies as young as 16 months to get their earliest education in what a baby should know directly from Dr. Baldwin and his assistants.

In scientific circles, this psychologist stands out as one of the pioneers in studying the normal development of young children. His child research station, founded at the University of Iowa ten years ago, was unique when he opened it, and today it is still a well known standard for many similar institutions.

As a result of thousands of experiments and careful record taking, the station has added materially to modern knowledge of these first years of life. Records on 800 babies less than two years of age have been accumulated, and in the anatomical line alone, 659,000 X-ray plates are available showing the growth of the child. The growth curves compiled at this station have been copied widely in scientific books on child and racial development.

Dr. Baldwin, who is playing so large a part in the normal development of young Iowans, is not a native of the tall corn state. He was born in Marshalltown, Pa., in 1875. His Ph. D. degree is from Harvard, 1905. In twenty-seven years he has taught psychology and education in universities as far east as Johns Hopkins and as far west as the University of Texas.

Science News-Letter, July 16, 1927

Eruption Just Beginning

The awakening of Kilauea, the Hawaiian volcano which after three years quiescence is now again pouring out lava, is considered by volcanologists to be the first stage of a lengthy period during which the inner crater, Halemaumau, will gradually fill with the molten rock.

Experts do not look for a repetition of the great explosive eruption of 1924 when the crater of the inner "Pit of Everlasting Fire" was enlarged ten times. Another sort of eruption is now in progress.

Kilauea is one of the five great volcanoes which have joined in forming the Island of Hawaii. Besides Kilauea, Mauna Loa and Hualalai have been active in historic times. Kilauea consists of a low dome 4,040 feet high on the southeast side of the great dome of Mauna Loa, three times as high. On Kilauea's summit is a shallow crater, three miles long and two miles wide, and in the floor of the crater is the pit of Halemaumau, a hole about 3,500 feet across extending about 1,300 feet below the rim of the volcano. It is within this great fire pit that the lava has now reappeared.

It is estimated that there is now about 50 feet of lava in the inner pit and that it will take about a year for this great hole to fill. When filled, the lava will flow out upon the floor of the main crater.

Upon the very rim of this crater now showing renewed activity there is an observatory from which scientists keep constant watch upon the sleeping volcano. This unique institution is under the direction of Dr. Thomas A. Jaggar who at present is in Alaska investigating volcanoes there and planning similar observatories for that territory. In his absence R. M. Wilson is in charge. Each week for the past few years a letter reporting Kilauea's condition has been issued to the scientists of the world.

Kilauea's present activity is being watched with interest by two Washington scientific organizations, the U. S. Geological Survey under whose jurisdiction the Hawaiian Volcano Observatory falls, and the Geophysical Laboratory of the Carnegie Institution of Washington which has conducted investigations of volcanic explosions throughout the world.

Dr. Arthur L. Day, director of the Geophysical Laboratory, has made personal investigations at Kilauea and is waiting further re-

(Just turn the page)

Eruption Just Beginning

(Continued from page 39)

ports of the eruption with interest before determining whether further research will be undertaken.

In less scientific days there would be wide-spread attempts at the appeasement of the anger of Pele, the dreaded goddess of Kilauea. Even today native Hawaiians are reported to have made offerings to the volcano.

While much must still be learned about volcanoes, science now knows that they are local affairs, comparatively small test tubes for cosmic chemistry, and not outlets for a vast interior mass of liquid fire deep within the earth. It has also been discovered that the boiling lava is hotter at the top than it is in its depth.

Science News-Letter, July 16, 1927

Lepers so often suffer from other diseases also that only about three per cent. of them die from leprosy itself.

The "sea flea" which moves in a series of hops has been known to attain a speed in the water of 60 miles an hour.

The Maharajah of Navanagar crossed a tiger and a lion and produced a 'tigon' which was sent to the London Zoo.

Photographs of the inside of a machine gun or service rifle barrel are made by means of a small periscope passed through the bore, the images being recorded on a moving picture film.

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MEMORANDUM

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Last Meteorite

(Continued from page 39)

was seen by quite a number of people at the time, talked of and forgotten."

The report that brought about the recent expedition was as detailed as it proved unfounded. The meteorite, it was said, fell on soft ground, penetrating the earth to an unknown depth, leaving a hole some six feet in diameter with raised rim and burning off the greasewood and sage brush around the hole for a distance of 200 yards. The soft ground about the hole, it was further stated, was baked by the meteorite so that it resembled a porous cork, light in weight. And the location was definitely given in the upper end of the Jackson Valley. Dr. Reeds, however, failed to find the meteorite. More than that, the location, he discovered, had none of the features described, but was an ancient flood plain deposit consisting primarily of water-worn pebbles and rounded boulders set in a moderate amount of alluvial earth.

But Dr. Reeds has not lost hope. The distance between Tuscarora where the meteorite was observed in the sky and the Jackson Mountains is 120 miles. Between these two points are many desert valleys, any one of which, as he points out, may harbor the ultimate resting place of Nevada's lost meteorite.

Science News-Letter, July 16, 1927

An ostrich has 25 white plumes in each wing.

Stones found in an ostrich's gizzard were once thought to be good medicine for eye diseases.

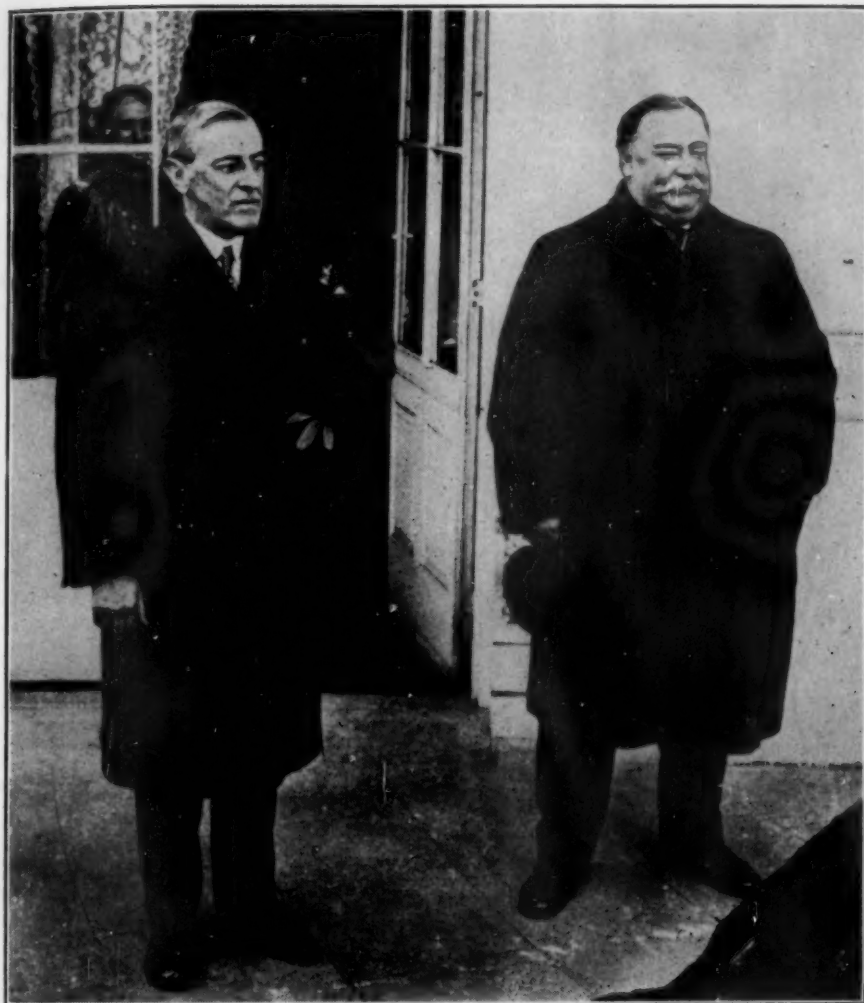
Taxes on automobiles in Europe are heavy; in some instances the tax is 50 per cent. of the car's cost.

A liquid to make wood fireproof has been patented by a Norwegian, according to report from Oslo.

The Jarrah, a Eucalyptus tree of Australia, sometimes sends its roots down 120 feet to insure its water supply.

Smallpox marks on the mummy of Rameses V indicate that this disease was known to the Egyptians of about 1200 B. C.

During the month of October, when deer hunting was permitted in the Kaibab Forest, in Arizona, 553 deer were killed.



PROMINENT EXAMPLES of the "flat" and the "round" types.

Animal Types

(Continued from page 34)

this connection. Undoubtedly the endocrine glands, and especially the thyroid, pituitary and interstitial glands, are concerned in the production of both the extreme and intermediate types."

The pycnics and the asthenics may be considered as standing at the extreme ends, so to speak, of the scale of classification. In between is a huge group of intermediates that partake in a measure of the characteristics of both. Among the several subdivisions of this group the muscular types have been designated as athletics. He-man high spots of this category are so widely advertised in the sporting pages and the movies that further elucidation would be superfluous.

Stout and Slender Animals

Human pycnics can find their prototypes throughout the whole animal and vegetable kingdom. In dogdom there are bulldog, mastiff and Prince Charles pycnics and many an elon-

gated asthenic among the greyhounds, wolfhounds and whippets. With birds there are the rounded parrots and finches on one hand and lanceolate cranes, herons and flamingoes on the other. Among animals in general, the giraffe and the armadillo furnish striking examples of the linear and the curved. The snake and the tortoise, the eel and the carp, and the vines and the melon cacti carry out the contrast

among reptiles and fishes and over into the plant family.

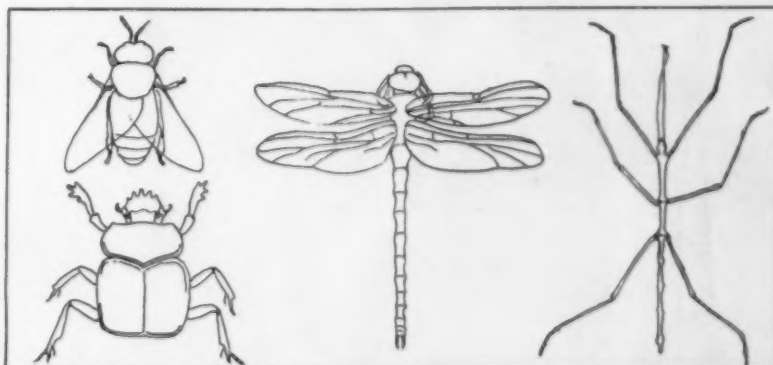
Insects, being most lavishly represented on this terrestrial sphere, furnish particularly plentiful examples of Mutts and Jeffs, Prof. Wheeler points out. Chunky, round pycnic beetles, moths, bugs and caterpillars abound, while thousands of tenuous grasshoppers, mosquitoes and walking-sticks can be met with on any summer day. In the insect world as among humans, however, the intermediate types are numerous, and, adds Prof. Wheeler, "if I designate this group as athletic, the economic entomologists who spend their lives ardently and often unsuccessfully wrestling with them will certainly not object."

Dwarfs and Giants

Prof. Wheeler also calls attention to the exceptional types among insects such as giants and dwarfs. The soldier ants of certain species are in many respects analogous to the grotesque giants of the human species while the small workers might be called ant Tom Thumbs. The development of these forms evidently depends on both genetic and endocrine glandular factors but the proportional intervention and interrelation of these factors have not been established.

"Owing to lack of knowledge," he says, "of the precise functions of the various glands which in insects might be regarded as analogous to the endocrine glands of vertebrates, we are unable to frame any satisfactory physiological explanation of the Hexapod dwarfs. If certain ants have really learned to produce achondroplastics and ateleotics (malformed dwarfs and types of arrested development) ad libitum and to turn over to them the main asexual activities of the colony, we should have another fine example of

(Just turn the page)



CONTRAST THE CURVING CONTOURS of this chunky bee and beetle with the sylph-like grace of the dragon fly and walking stick.

Animal Types

(Continued from page 41)

the extraordinary ability of insects to exploit to the utmost everything in their environment. As yet man has learned to employ his achondroplastics, ateleotics and other dysplastics only as court pets, court jesters and circus freaks."

Skinny Children Need Play

Recent investigations have demonstrated that certain physical types tend to go with certain types of personality and certain abnormal mental conditions. Asthenic children, according to some psychiatrists, should be given special opportunities for outdoor life and athletics, in order to safeguard them from developing shut-in personalities. The slender types are apt to be quiet, reflective people who fail to express their emotions and ideas in action. The stocky, sturdily built individual is more likely to express himself easily in action and more likely to be normally interested in other people and affairs about him. Pycnic children are apt to be sufficiently interested in sports and other social activities without any urging, but children of the pronounced long, lean type need to be encouraged to develop what social traits they have, psychologists say.

Anthropologists' Types

Another favored system of classification by which anthropologists like to pigeon-hole the rest of us mortals has four major types, called respectively muscular, respiratory, digestive and cerebral. This latter type takes its name from the fact that the cerebrum, that part of the brain that controls the mind, is likely to be large and well developed while the cerebellum, which controls the motor activities and the muscles, is small and poorly developed. According to Prof. R. Bennet Bean, of the University of Virginia, cerebrals may be either small and slender or short and stocky. They are the product of civilization and are thought to have first developed around the shores of the Mediterranean. Many of the greatest minds the world has known have been cerebrals of the small slender type. Witness Napoleon Bonaparte with his vision of world empire, Thomas Jefferson with his concept of a too-idealized democracy, and Alexander Hamilton, the financial genius who made substantial contributions to putting our infant republic on its feet.

Environment is an important fac-

tor in producing this type, says Prof. Bean. Children with good intellectual heritage brought up in city apartments where there is little opportunity for play and where books are the chief source of amusement, are likely to develop into this type.

Tall, Muscular and Fat

The respiratory is the tallest of the types and is marked by outstanding physical and mental activity and endurance. This type is believed to have gone through numerous prehistoric migrations from the plateaus of Asia over Europe, down into Mesopotamia and Egypt and the interior of Africa and even into North America. The tall chiefs of the American Indians were respiratory and so are many of the tall Negro races of East Africa. Strenuous nomadic life in the high altitudes is thought to have developed the lungs and respiratory passages. People of this type do not bear confinement well and fall an easy prey to tuberculosis. The great open spaces is the place where they really belong. Both the Father of his Country and Abraham Lincoln are choice specimens of this type that have evolved along mental lines. Both were sound, hardy individuals, men of vision backed up with thorough reasoning power and great strength of character. The women painted by Raphael and Leonardo da Vinci are also ascribed to this class by Prof. Bean.

People of the muscular type may be either long or short. The tall muscularities have short arms but long well developed legs useful in running, horseback riding and mountain climbing. The short ones are usually more heavily built with prominent muscular development more generally distributed. Venus of Milo fits into the feminine side of this category rather than into the idealized flat flapper type so striven for today.

The most conspicuous examples of the digestive type are short with the tendency to obesity that results in multiple chins and helps keep the corset manufactures going in these unregenerate days. This type is believed to have originated after animals were domesticated and man went in for agriculture. In the sections where farming pays and people "live well," the digestive abounds. It is more variable than the other types and depends on the inherent form of the individual and conditions during development. The round Dutch burghers beloved of Hals

and Maes are fine specimens of this category.

Relation of Type and Disease

All these types are variants from the common or garden variety of man. Pure types of any kind are not numerous while cerebral and digestive seem rarer than the other two. Over-development of any functional system is likely to lead to the deterioration of that particular system under strain. Consequently it is to be expected, say scientists, that cerebrals break down most readily in the brain, the respiratory in the lungs, the muscularity in the motor system and the digestive in the alimentary canal. Psychologists are interested in the mental reactions that they find characteristic of certain physical types, while the disease susceptibility of the different physical types is reopening the way for type diagnosis that has been reclining in the discard for sixty years or so.

At the Constitution Clinic at the Presbyterian Hospital in New York, Dr. George Draper is attempting to sort out some of these relationships between the structure and functions of the body, mental process and immunity and susceptibility in diseases. His results would seem to indicate that there may have been more in the "consumptive build" and "bilious look" and similar gloomy forecasts of Grandmother's day than we once thought. For it is pretty definitely established that human beings of a certain uniformity of structure seem more prone to certain types of diseases than others. The possibilities of the practical application of these facts in the practice of medicine in the future can be little more than guessed at but at present the whole subject of type classification occupies a place of increasing importance.

Science News-Letter, July 16, 1927

Sleds were used before wheels in ancient Egypt.

Copper mirrors, hairpins, vanity cases, and nail files were dug up in a Babylonian palace of Nebuchadnezzar's time.

The platypus, or duckbill of Australia, has very highly developed glands, three of which have not yet been found to exist in man.

Fatter sweet potatoes can be raised if fertilizer containing a comparatively large amount of potash is used, according to recent tests.

BIOLOGY

NATURE RAMBLINGS

By FRANK THONE



Dogs

When Adam and Eve were driven out of Paradise, an old legend says, the dog was the only animal that followed them. The ox and the ass they had to catch and tame later; the cat they caught, but never tamed.

Legends aside, the dog is without question the oldest of domesticated animals. All the ruins of man's houses and cities since the earlier part of the New Stone Age have turned out bones of dogs of various breeds, and dogs are portrayed on the earliest sculptures of Egypt and Babylonia. As yet, no evidence has been produced that the Neanderthals and the Cro-Magnones of the Old Stone Age had dogs—what lonesome boyhoods these men must have had!

It is pretty well agreed among naturalists that domestic dogs began as wolf-like animals of some kind, probably of some small species of wolf now extinct. The idea was not popular once, but since such novels as "The Call of the Wild" and "White Fang" we are becoming more ready to acknowledge a lupine ancestry for our friends. The noted British naturalist, J. Arthur Thomson, subscribes to this doctrine, and publishes a figure like the illustration here used as an approximate restoration of the earliest dog-skeleton so far discovered.

One argument in favor of an original unity of the human race is the presence of dogs wherever there are men. The Incas, Thomson says, had three distinct types of dog (one of them like a dachshund!) when the white men came; and the only non-marsupial mammal in Australia, aside from man, is the dingo, or wild dog.

Science News-Letter, July 16, 1927

Of the five weeks of life allotted to the average bee, three weeks are devoted to duties within the hive.

Some kinds of spiders construct a web about foul smelling flowers in order to attract flies into the trap.

INVENTION

Microphones in Vaults

A new barrier has been placed between the bank robber and his swag as a result of research by the engineers of the Bell Laboratories in New York.

Already learned in the ways of cops, night watchmen and the miles of wire incidental to the usual electric alarm system, the robber may now find himself up against a new signal device invisible from the outside yet capable of calling a squad of armed guards upon him as he works. In fact, the safe blower now works under war-time conditions for the new alarm is founded on the Type H inertia microphone developed in the laboratories during the war for submarine detection.

This alarm consists of a microphone capable of detecting the most minute vibrations of the walls of a safe. It has already been installed in several banks in New York and in Philadelphia. The microphone will not pick up sound waves. The stimulus is received mechanically rather than acoustically. But the slightest jar will be sufficient to set in motion an electric current to the main office where both audible and visible signals will be received.

Such devices have been conceived before. But heretofore they have transmitted vibrations and even sounds from outside. Thus guards have been summoned when merely a heavy truck was rumbling by or when street conversation grew sufficiently loud.

The newly developed microphone, however, is not affected by disturbances outside the vault. At one of the banks in which it is installed subway trains rumble constantly within a few feet of the vault and no false alarm is sent out. But let a careless cleaner so much as knock the handle of his broom against the vault door or walls and armed guards will come to investigate. As for cracksmen, even the acetylene torch is without avail. It causes a sputtering of the molten metal strong enough to shake the wall slightly.

Further, the microphone takes up infinitely less space than the wire signal system. It is small and several microphones effectively placed will be sufficient to protect the largest room. In contrast to this compactness, eighteen miles of wire were recently used in installing the old alarm system in the vault of a prominent New York bank.

Science News-Letter, July 16, 1927

ARCHAEOLOGY

Translates Glozel Writing

An attempt to read the story on some of the little clay tablets covered with a mysterious, crude writing, unearthed at Glozel, near Vichy, has been made by M. Camille Jullian, well-known French expert on Roman antiquities.

These inscriptions, which have kept European archaeologists arguing for the past six months, are read by M. Jullian as charms in cursive Latin, such as were used by sorcerers of the Roman Empire. On one tablet he read a magic formula dedicated to Diana and the animal sacred to her, the stag.

While M. Jullian contributes this to indicate that the Glozel writings date back to only about 300 B. C., other scientists continue to insist on an entirely different history for the tablets, lamps, stone axes, and other objects found at Glozel.

Some of the savants who have examined the great collection of articles dug up in the field at the French village consider that they must have belonged to prehistoric people, who lived at 3000 B. C., or perhaps even earlier. This has aroused great interest because of the cryptic alphabetic writing found at the site, since the alphabet is not considered to be older than 2000 B. C. at the oldest.

A new angle on the controversy is raised by Portuguese scientists, who find a resemblance between the Glozel writing and inscriptions which have been unearthed in western Portugal, at Alvao. Like Glozel, these Portuguese finds are the subject of argument, some archaeologists considering them as belonging to about 500 B. C., and some assigning them to a time several thousand years earlier, in the New Stone Age, before men learned to use metals.

Both the Glozel and the Alvao discoveries have been pronounced huge fakes by several European scientists, though the majority of experts who have examined them have not questioned their genuineness while differing as to their date. Capt. O. G. S. Crawford, British archaeologist who visited Glozel and examined the articles dug up there, has announced that French scientists have been duped by an obvious fraud.

Digging at Glozel, which was carried on by Dr. A. Morlet in 1925 and 1926, was resumed this spring, and additional objects of the sort previously found there, have been discovered.

Science News-Letter, July 16, 1927

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SCIENCE REMAKING THE WORLD

Edited by Otis W. Caldwell and Edwin E. Slosson.
New York: Doubleday, Page & Co. 1923.
\$2.50 and \$1.00.

KEEPING UP WITH SCIENCE

Edited by Edwin E. Slosson.
New York: Harcourt, Brace & Co. 1924.
\$2.50.

WHY THE WEATHER?

By C. F. Brooks.
New York: Harcourt, Brace & Company. 1924.
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SOIL AND CIVILIZATION

By Milton Whitney. Library of Modern Sciences.
New York: D. Van Nostrand Co. 1925.
\$3.00.

CHEMISTRY IN MODERN LIFE

By Svante Arrhenius, translated and revised by
C. S. Leonard. Library of Modern Sciences.
New York: D. Van Nostrand Co. 1925.
\$3.00.

DWELLERS OF THE SEA AND SHORE

By William Crowder.
Young People's Shelf of Science. Edited by E. E. Slosson.
New York: The Macmillan Co. 1923.
\$2.25.

ANIMALS OF LAND AND SEA

By Austin Clark. Library of Modern Sciences.
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SCIENCE SERVICE

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First Glances at New Books

THE NEW TYRANNY—Francis J. Oppenheimer—*Boni*. This is a book that leaves the reader dazed—and excited. A medley of clever epigrams, pungent criticisms, with characterizations, puzzling paradoxes, strange juxtapositions of antipodal statements, startling inversions of conventional conceptions. The author out-Hegels Hegel in the unification of opposites. Mysticism and skepticism are identical in ethics, esthetics and economics. "Modern thought is in a turmoil. Modern art is in a stew." The volume is filled with imperfectly fused fragments gathered by an astonishingly wide range of reading. Turning over a dozen pages one strikes citations from Plato, Swendeborg, Mrs. Eddy, Papini, Paracelsus, Gandhi, Uspensky, Nietzsche, Freud, Lao-Tse, Spinoza, Wells, Moses and Marx. Everything that the Jew has been charged with or credited with is denied by Mr. Oppenheimer who thereupon proceeds to prove that the Jew really runs to the opposite extreme.

Science News-Letter, July 16, 1927

ESSENTIALS OF PSYCHIATRY—George W. Henry—*Williams and Wilkins* (\$2.75). A clearly written, up-to-date text, which aims not merely to classify and describe mental diseases but also to show the significance of mental symptoms in physical disease. A practical chapter on psychiatric nursing by Adele Poston adds to the value of the book, in view of the growing interest in securing adequate nursing care for mental cases.

Science News-Letter, July 16, 1927

HEART AND ATHLETICS—Felix Deutsch and Emil Kauf—*Mosby* (\$2.50). A clinical study of the influence of athletics on the heart. The authors conclude that the "fact is that athletics brings about changes in the heart . . . which . . . cannot be looked upon as harmless"

Science News-Letter, July 16, 1927

THE QUALITY OF THE EDUCATIONAL PROCESS IN THE UNITED STATES AND IN EUROPE—William S. Learned—*Carnegie Foundation for the Advancement of Teaching*. An orderly analysis, showing how an education in England, France and Germany differs from an American education, and drawing attention to methods by which European systems seek to develop the intellectual abilities of their students to the utmost.

Science News-Letter, July 16, 1927

GENERAL CHEMISTRY—Thomas P. McCutcheon and Harry Seltz—*Van Nostrand* (\$3.50). A complete and well written college text by a University of Pennsylvania professor and his former colleague. The division into two parts, one on theoretical chemistry (with a large proportion of physical chemistry), and the other on descriptive chemistry (intended to accompany a laboratory course), is an innovation that will be welcome to many college teachers.

Science News-Letter, July 16, 1927

CLASSICS OF MODERN SCIENCE (Cöpernicus to Pasteur)—William S. Knickerbocker—*Knopf*. Who can tell more adequately what the great pioneers of science really thought and discovered than their own writings? And here is assembled choice and important extracts presented so that all may read.

Science News-Letter, July 16, 1927

THE ABILITIES OF MAN, THEIR NATURE AND MEASUREMENT—C. Spearman—*Macmillan* (\$4.50). A technical handling of this subject, in which a psychologist and philosopher of the University of London advocates that special abilities be distinguished from general or group abilities. The author fits his facts into mathematical formulae and arranges them into a system, in the hope of taking a step toward "supplying psychology with a genuinely scientific foundation."

Science News-Letter, July 16, 1927

SELECTION AND CARE OF GARDEN HOSE—Bureau of Standards Circular 327—*Government Printing Office* (\$10). For the average person, who, having little knowledge of the construction and relative value of different kinds of garden hose, may be guided by price and appearance or influenced by a familiar trade name, this pamphlet holds dependable information. The three types of hose are described in detail and simple methods of inspection and test are given in a non-technical way.

Science News-Letter, July 16, 1927

THE ROMANCE OF THE FUNGUS WORLD—R. T. Rolfe and F. W. Rolfe—*Lippincott* (\$3.50). A well written popular account of the fungi most commonly encountered, illustrated with many excellent photographic plates. Deserves a place on every botanical bookshelf.

Science News-Letter, July 16, 1927

INTRODUCTION TO THE HISTORY OF SCIENCE. VOLUME I. FROM HOMER TO OMAR KHAYYAM—George Sarton—*Williams and Wilkins*. This is literally a monumental work surveying in large part untouched fields in the history of science, and bringing for the first time Chinese, Hindu, and Arabic achievements in science into juxtaposition with contemporary progress in Western Europe. Professor Sarton set about his life work in Belgium before the war through the publication of the quarterly journal, *Isis*, and has pursued it steadfastly through all the vicissitudes of the years since. The manuscript itself has had an adventurous career since it was buried in a garden near Ghent for five years on account of the German invasion. In these eight hundred pages some mention is made of all writers of importance on scientific subjects in any part of the world from the dawn of history to the twelfth century, with a brief summary of their contributions and a careful bibliography of texts, translation, and criticism. The author gives a comprehensive survey of science throughout the world for each half century, and besides the bibliographical data enriches the volume with personal observations on the intellectual development of the period. This first volume stretches from Homer to Omar, neither of whom are ordinarily considered among men of science.

Science News-Letter, July 16, 1927

DIX ANS D'EFFORTS SCIENTIFIQUES, INDUSTRIELS ET COLONIAUX: 1914-24—*Chémie et Industrie*. To anyone who thinks that the war killed industry in France, this work will be a revelation! In its 1508 pages prominent French authorities tell of the accomplishments of the ten years ending in 1924 in commerce, textiles, rubber, aviation, automobiles, use of hydraulic power, river transportation, and many other fields.

Science News-Letter, July 16, 1927

THE ROCKEFELLER FOUNDATION—A Review for 1926—George E. Vincent. The far-flung work of this great health foundation is interestingly described in this annual report.

Science News-Letter, July 16, 1927

CATALOGUE OF BIRDS OF THE AMERICAS AND THE ADJACENT ISLANDS, Part V, Tyrannidae—*Field Museum of Natural History*. This is the continuation of an ambitious catalogue.

Science News-Letter, July 16, 1927

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The classification of the Library of Congress has come into common use in the libraries of the country owing to the publication of the Government of the card index of all new books. We print below a list of the subject titles which are most used in the SCIENCE NEWS-LETTER. The full scheme of classification is contained in "Outline Scheme of Classes," issued by the Library of Congress.

A General Works. Polygraphy.
B Philosophy.
BF Psychology.
G Geography, voyages, travel.
GA Mathematical and astronomical geography.
GB Physical geography.
GC Oceanology and oceanography.
GF Anthropogeography.
GN Anthropology. Somatology. Ethnology. Ethnography. Prehistoric archaeology.
GR Folklore.
GT Manners and customs.
GV Sports and amusements. Games.
HC Economic history and conditions. National production.
HD Economic history. Agriculture and Industries.
HE Transportation and communication.
HF Commerce.
HM Sociology. General.
HQ Family. Marriage. Woman.
HV Social pathology.
L Education.
M Music.
N Fine arts.
P Philology and linguistics.
O Science. General.
QA Mathematics.
QB Astronomy.
QC Physics.
QD Chemistry.
QE Geology.
QH Natural history.
QK Botany.
QL Zoology.
QM Human anatomy.
QP Physiology.
QR Bacteriology.
R Medicine. General.
S Agriculture. General.

SB Field crops. Horticulture. Landscape gardening. Pests and plant diseases.
SD Forestry.
SF Animal culture. Veterinary medicine.
SH Fish culture and fisheries.
SK Hunting. Game protection.
T Technology. General.
TA Engineering. General.
TC Hydraulic engineering.
TD Sanitary and municipal engineering.
TE Roads and pavements.
TF Railroads.
TG Bridges and roofs.
TH Building construction.
TJ Mechanical engineering.
TK Electrical engineering and industries.
TL Motor vehicles. Cycles. Aeronautics.
TN Mineral industries. Mining and Metallurgy.
TP Chemical technology.
TR Photography.
TS Manufactures.
TT Trades.
TX Domestic science.
U Military science. General.
V Naval science. General.

Dewey Classification

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000 GENERAL WORKS—
010 Bibliography
020 Library economy
030 General cyclopedias
040 General collected essays
050 General periodicals
060 General societies
070 Newspapers
080 Special libraries. Polygraphy.
090 Book rarities
100 PHILOSOPHY—
110 Metaphysics
120 Special metaphysical topics
130 Mind and body
140 Philosophical systems
150 Mental faculties. Psychology
160 Logic
170 Ethics
180 Ancient philosophers
190 Modern philosophers
200 RELIGION—
210 Natural theology
220 Bible
230 Doctrinal. Dogmatics. Theology
240 Devotional. Practical
250 Homiletic. Pastoral. Parochial
260 Church. Institutions. Work
270 Religious history
280 Christian churches and sects
290 Ethnic. Non-Christian
300 SOCIOLOGY—
310 Statistics
320 Political science
330 Political economy
340 Law
350 Administration
360 Associations. Institutions
370 Education
380 Commerce. Communication
390 Customs. Costumes. Folklore
400 PHILOLOGY—
410 Comparative
420 English
430 German
440 French

450 Italian
460 Spanish
470 Latin
480 Greek
490 Minor Languages
500 NATURAL SCIENCE—
510 Mathematics
520 Astronomy
530 Physics
540 Chemistry
550 Geology
560 Paleontology
570 Biology
580 Botany
590 Zoology
600 USEFUL ARTS—
610 Medicine
620 Engineering
630 Agriculture
640 Domestic economy
650 Communication. Commerce
660 Chemical technology
670 Manufactures
680 Mechanic trades
690 Building
700 FINE ARTS—
710 Landscape gardening
720 Architecture
730 Sculpture
740 Drawing. Decoration. Design
750 Painting
760 Engraving
770 Photography
780 Music
790 Amusement
800 LITERATURE—
810 American
820 English
830 German
840 French
850 Italian
860 Spanish
870 Latin
880 Greek
890 Minor languages
900 HISTORY—
910 Geography and travels
920 Biography
930 Ancient history
Modern
940 Europe
950 Asia
960 Africa
970 North America
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990 Oceania and polar regions

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Anniversaries of Science

July 23, 1916—Sir William Ramsay, discoverer of the rare gases in the atmosphere, died.

It is well known to you all how the remarkable observation of Lord Rayleigh that nitrogen from the atmosphere possesses a greater density than that prepared from ammonia or nitrates led to the discovery of argon, a new constituent of the air. I need not say that had it not been for this observation the investigations of which I shall speak this evening would never have been carried out, at least not by me. You will also doubtless remember that the search for some compound of argon was rewarded, not by the attainment of the quest, but by the discovery, in cleveite and other rare uranium minerals, of helium, an element whose existence in the chromosphere of the sun had already been suspected. And, further, I hardly need to recall to your minds that the density of helium is in round numbers 2, and that of argon 20, and that the ratio of specific heats of both these gases, unlike that of most others, is 1.66. . . .

From slight irregularities in the physical constants of argon, and from the probable place in the periodic table of the new elements, it seemed likely to Ramsay that there are other gaseous elements similar to argon and helium. After searching for them in many minerals, he tried to isolate them from liquid air by fractional distillation.

It seemed to me a pity to boil all the air without collecting the last residue; for, though it seemed improbable that the looked-for element could be here, yet it was, indeed, possible that a heavier gas might accompany the argon. This suspicion was confirmed. The residue from the liquid air consisted chiefly of oxygen and argon, and, after removing the oxygen and nitrogen, beside the spectrum of argon were two brilliant lines, one in the yellow, which was not identical with D_2 of helium, and one in the green. This gas was decidedly heavier than argon; its density was 22.5 instead of the 20 of argon. We had, therefore, discovered a new body, which was an element, for the ratio between the specific heats was 1.66. To this element we gave the name "krypton." Up to this time we have not followed further the study of this element. . . . It was, however, our first intention to examine the lightest part of the argon. In many, however, we remarked in passing, that the wave-length of the green line of krypton is exceedingly close to that of the northern lights, being 5,570, while the latter is 5,571. . . .

We first directed our attention to the lighter fractions, for these had for us the greatest interest. The density of this gas was found to be 14.67; the ratio between the specific heats was, as usual, 1.66, and the spectrum showed, beside the well-known groupings of argon, a large number of red, orange and yellow lines of varying intensity. Evidently we had before us a new element which was contaminated with argon. . . . which we will hereafter designate by its name of "neon." . . .

The heaviest of these gases we have weighed, although in impure condition. Its

density is 32.5. I need not call your attention to the fact that there is space for an element of the helium group between bromin and rubidium. Such an element should have an atomic weight of 81 to 83, which corresponds to a density of 40.5 to 41.5, under the very probable supposition that, like the other gases of this group, it is monatomic. The spectrum of this gas, which we have named "xenon"—the stranger—has many lines; none of these are of marked intensity, and in this respect the spectrum resembles somewhat that of argon. It is also analogous to argon in another particular, that the spectrum undergoes a remarkable change when a Leyden jar is put into the circuit. As with argon, many new blue and green lines appear, while other lines, mostly in the red, either disappear or lose much of their intensity. Further than this we have not proceeded in studying xenon.

—Ramsay: *The Recently Discovered Gases and Their Relation to the Periodic Law*, an address given in 1898.

July 24, 1912—The First International Eugenics Congress opened in London.

Let it be asserted most emphatically that, if there is anything in the world which eugenics or race-culture does *not* promise or desire, it is the production of a uniform type of man. This delusion, for which there has never been any warrant at all, possesses many of the critics of eugenics, and they have made pretty play with it, just as they do with their other delusions. Let us note one or two facts which bear upon this most undesirable ideal.

In the first place, it is unattainable because of the existence of what we call variation. No apparatus conceivable would suffice to eliminate from every generation those who varied from the accepted type.

In the second place, this uniformity is supremely undesirable from the purely evolutionary point of view, because its attainment would mean the arrest of all progress. All organic evolution, as we know, depends upon the struggle between creatures possessing various variations and the consequent selection of those variations which constitute their possessors best adapted or fitted to the particular environment. If there is no variation there can be no evolution. To aim at the suppression of variation, therefore, on supposed eugenic grounds (which would be involved in aiming at any uniform type of mankind) would be to aim at destroying the necessary condition of all racial progress.

—Saleeby: *Parenthood and Race Culture*.

July 25, 1909—M. Blériot flew his monoplane across the English Channel.

The next experimenter to be mentioned is Louis Blériot. He began his experiments in 1906, and has built and broken more machines than any other aviator in the world. He has built 12 machines and broken about 15, that being accomplished by rebuilding the same machine after smashing it. He is a man of tremendous pluck and wonderful imagination, and therefore tries all sorts of things. . . .

On the 25th of July Blériot attempted to cross the British Channel and succeeded. . . . That trip comprised a distance of 33 miles and was made in 37 minutes. It created great excitement, great applause, and great

wonder, although, as a matter of fact, it was perhaps not as difficult a feat as the previous flying across country, but it appeared very much to the imagination.

—Chanute: *Recent Progress in Aviation*, an address given in 1909.

Science News-Letter, July 16, 1927

AVIATION

Model Airplane Contest

Thousands of boys and girls on organized playgrounds in some 800 American cities are expected to compete this summer in a national model airplane construction and flying contest sponsored by a committee headed by Orville Wright, airplane pioneer.

The recent achievements of aviation, particularly the Lindbergh flight inspired this competition which will be conducted by the Playground and Recreation Association of America. It will come to a climax at national finals to be held in Memphis in October.

The contest was suggested by Dr. John H. Finley, educator and editor, as a means of interesting the youth of America in the scientific principles underlying aviation. The three federal air secretaries, F. Trubee Davidson, of the War Department; Edward P. Warner, of the Navy; and William C. McCracken, of the Commerce Department, have accepted membership on the contest committee.

Science News-Letter, July 16, 1927

CHEMISTRY

"Alchemist" Tests Fail

If ordinary lead was changed into mercury and the rarer element thallium by two Dutch experimenters over a year ago, repetitions of the process here have not been successful.

In a communication to the English scientific magazine *Nature*, Dr. L. Thomsen, of the Norman Bridge Physics Laboratory of the California Institute of Technology, states that he has tried to transmute the elements by the same method. More powerful electric currents were employed than those used by Smits and Karssen, the Dutch scientists. But Dr. Thomsen obtained no evidence of the slightest trace of thallium or mercury having been formed from lead.

Science News-Letter, July 16, 1927

Plants grown in a soil rich in lime generally contain more lime than plants grown in soil deficient in this material.

India ink, invented by the Chinese about 1200 B. C., was made by mixing very fine soot with gelatin prepared from asses' skin.

The Problem of Translation—

Science, probing the unknown universe, writes its findings in cryptic language. A stellar galaxy shining faintly in the heavens hides its splendor and its immensity in numbers and formulæ; a minute germ has thrust upon it a long Latin name. With the aid of such scientific shorthand and such technicalities, science pushes on to new discoveries and new heights.

Yet the facts and the methods of science must penetrate and permeate the whole fabric of civilization if the world is to become an increasingly better place to live in. The man in the street, the child in the school, the merchant in the counting house, the judge on the bench, the priest in the temple, all of those who make the world, must know, appreciate, understand and cherish the spirit of research and the power of thought.

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